

REMARKS

Claims 1-22 are currently pending in this application. Claims 1, 15 and 17 have been amended. Applicant has carefully reviewed the Office Action and respectfully requests reconsideration of the rejected claims in view of the remarks presented below.

Response to Arguments

In the "Response to Arguments" section of the present Office Action, it is stated that Applicant argued that Fischell "fail[s] to teach or suggest combining corresponding ST segments (or phases) from [a] plurality of electrograms to determine an ST segment value." In response, column 7, lines 53-60 of Fischell is cited as disclosing "that an ST segment value is determined by taking the average of a given number of ST segments (or phases)."

As a threshold matter, the above-quoted characterization of Applicant's argument is incomplete. Throughout prosecution, Applicant has maintained that Fischell fails to disclose an ST segment value (or phase value) that is determined by combining corresponding ST segments from a plurality of different electrograms corresponding to cardiac activity sensed by a plurality of different electrode configurations. Thus, while Fischell may disclose various electrode configurations that are capable of providing different electrograms, it teaches the use of such capability only within the context of data collection and storage. In fact, as argued in Applicant's January 17, 2006 amendment, with respect to actual cardiac-event-detection processing, Fischell specifies that the electrograms stored in the FIFO memory are extracted from the FIFO memory on a FIFO, electrogram-by-electrogram (**singular**) basis. In other words, there is no cardiac-event-detection processing in Fischell that involves "cross-electrogram processing," i.e., combining electrograms or segments of electrograms obtained using different electrode configurations.

Regarding column 7, lines 53-60 of Fischell, it discloses the use of baseline electrogram segments to calculate a ST deviation baseline, which in turn is used to calculate a ST shift. More specifically, it teaches that a beat-by-beat ST shift may be

obtained by subtracting the baseline average ST deviation from the amplitude of the ST deviation on each beat in a recently captured electrogram. Fischell teaches that the ST deviation of 4 to 8 beats of the baseline electrogram segment will be averaged to produce the average baseline ST deviation. Column 22, lines 38-40. Thus, the average ST deviation is based on the ST segments contained within a portion of a single baseline electrogram. There is no averaging of ST segments across a plurality of different electrograms obtained using different electrode configurations. Thus, Applicant disagree with the Examiner's statement that the averaging method in Fischell is – in essence – the same as combining corresponding ST segments from a plurality of electrograms.

In an effort to reiterate the "cross-electrogram" aspect of Applicant's devices and methods, each of independent claims 1, 15 and 17 have been amended to recite a plurality of electrograms, each electrogram corresponding to cardiac activity sensed by a different one of a plurality of electrode configurations.

Claim Rejections Under 35 U.S.C. §102

Claims 1-3, 8, 10-11, 15-17 and 19-22 were rejected under 35 U.S.C. §102(a) as being anticipated by U.S. Patent No. 6,609,023 (Fischell et al.).

Independent claim 1 relates to an implantable device that detects and discriminates between ischemia and myocardial infarction of a patient's heart. The device includes a plurality of electrodes that provide a plurality of cardiac activity sensing electrode configurations; a sensing circuit that provides a plurality of electrograms, each electrogram corresponding to cardiac activity sensed by a different one of the plurality of electrode configurations; and a discriminator that combines corresponding ST segments from the plurality of electrograms to determine an ST segment value and compares the ST segment value to a standard value to detect and discriminate between ischemia and myocardial infarction.

Independent claim 15 relates to an implantable device that discriminates between ischemia and myocardial infarction of a patient's heart. The device includes a plurality of electrodes that provide a plurality of sensing electrode configurations; a sensing circuit that senses cardiac activity detected by the plurality of sensing electrode configurations to provide a plurality of cardiac activity signals, each cardiac activity signal corresponding to cardiac activity sensed by a different one of the plurality of electrode configurations; and a discriminator that combines corresponding phases from the plurality of cardiac activity signals to obtain a phase value and compares the phase value to a standard value to discriminate between ischemia and myocardial infarction.

Independent claim 17 relates to a method of discriminating between ischemia and myocardial infarction of a patient's heart. The method include sensing cardiac activity of the heart with a plurality of cardiac activity sensing electrode configurations to provide a plurality of signals, each signal corresponding to cardiac activity sensed by a different one of the plurality of electrode configurations; combining corresponding phases from the plurality of signals to obtain a phase value; and comparing the phase value to a standard value to discriminate between ischemia and myocardial infarction.

In view of the remarks in the Response to Arguments section, Applicant submits Fischell fails to teach the combination of elements and features recited in each of independent claims 1, 15 and 17, including at least combining corresponding ST segments from a plurality of electrograms – each electrogram obtained using a different electrode configuration – to determine an ST segment value for comparison with a standard value to detect and discriminate between ischemia and myocardial infarction. Accordingly, Applicant requests reconsideration of the §102 rejections of these claims and their respective dependent claims.

If the §102 rejections of claims 1, 15 and 17 in view of Fischell are maintained, Applicant requests that the next communication from the Office include an identification of the section(s) of Fischell that is believed to correspond to each claim element. For example, the last Office Action did not include an indication of what in Fischell is believed to correspond to Applicant's claimed "standard value."

Claim Rejections Under 35 U.S.C. §103

Claim 4 was rejected under 35 U.S.C. §103(a) as being unpatentable over Fischell in view of U.S. Patent No. 5,273,049 (Steinhaus). Claims 13-14 and 18 were rejected under 35 U.S.C. §103(a) as being unpatentable over Fischell in view of U.S. Patent Application Publication U.S. 2003/0023175.

In view of the foregoing analysis of amended independent claims 1 and 17 in view of Fischell, Applicant believes that the rejections under §103 are rendered moot as dependent claims 4, 13-14 and 18 depend from allowable independent claims.

Allowable Subject Matter

Claims 5-7, 9 and 12 were allowed.

CONCLUSION

Applicant has made an earnest and bona fide effort to clarify the issues before the Examiner and to place this case in condition for allowance. Therefore, reconsideration and allowance of Applicant's claims 1-22 are believed to be in order.

Respectfully submitted,

Date

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